REMARKS

Claims 1-9, 12-21, and 24 are currently pending. Claims 10, 11, 22, and 23 have been withdrawn as directed to non-elected species. No claims have been amended herein.

Rejection of Claims under 35 U.S.C. §103(a) (¶2)

Reconsideration is respectfully requested of the rejection of claims 1-9 and 12 under 35 U.S.C. §103(a) as being unpatentable over WO 01/18310 (Kohler et al.).

Claim 1 is directed to a process for manufacturing a cellulosic paper product and requires forming an aqueous suspension of papermaking fibers; depositing the aqueous suspension of papermaking fibers onto a sheet-forming fabric to form a wet web; dewatering the wet web to form a partially dewatered web; topically applying a glycol compound selected from the group consisting of polyethylene glycol, triethylene glycol, glycerol and mixtures thereof to the partially dewatered web having a fiber consistency of about 80% or less; and drying the partially dewatered web by passing heated air at a temperature of at least about 175°C through the web.

Kohler et al. disclose a process for improving the surface characteristics (e.g., strength, brightness and aging resistance) of a paper or board by applying an aqueous solution (L_w) of a surface-finishing active ingredient (W) to a hydrophilic paper or board sheet. The surface-finishing active ingredient includes polyethylene glycol (W_1) having an average molecular weight greater than 1500, and desirably from 1600 to 20,000, present in the solution at a concentration of up to 50% by weight,

preferably from 0.1 to 20% by weight. The aqueous solution of polyethylene glycol may be applied by spraying the aqueous solution onto the surface of the paper or board sheet to be treated in a section of the papermaking process in which the paper or board sheet has a moisture content of ≤ 40%, corresponding to a fiber consistency of ≥60% (See page 13, lines 12-15). Further, the application rate of the solution is such that the concentration of the polyethylene glycol based on the dry substrate is in the range of from 0.005 g/m^2 to 5 g/m^2. The treated paper or board can be dried using drying rolls and drying roll batteries and, if desired, calenders and calender batteries in the dry end, using drying temperature conditions which are conventional, such as 100-250°C under pressure. Kohler et al. fail to disclose **through-drying** a partially dewatered web of papermaking fibers by passing heated air **at a temperature of at least 175°C** through the web.

As stated in MPEP §2143, in order for the Office to show a *prima facie* case of obviousness, the Office must meet three criteria: (1) the prior art reference(s) must teach or suggest all of the claim limitations; (2) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings; and (3) there must be some reasonable expectation of success. Applicants assert that the Office has not, and cannot, meet the burden of number (1) and/or (2) above, which requires the Office to show the reference teaches or suggests all of the claim limitations of the instant invention and that

there is some suggestion or motivation to modify the reference teachings.

The Office asserts that Kohler, et al. disclose a process of forming paper wherein a web is dried with hot air at a temperature range from 100 to 250°C, and that it would have been obvious that the hot air drying of Kohler, et al. includes hot air passing through the web since Kohler, et al. recite that other heating systems may be used. Applicants respectfully disagree.

Initially, applicants respectfully submit that the Office appears to be misinterpreting Kohler, et al. The Office has stated that Kohler et al. disclose drying a web at a temperature range from 100°C to 250°C by means of hot air (citing p. 14, line 1), and that this drying obviously includes hot air passing through the web. Although Kohler et al. do disclose drying using dry steam or hot air in the temperature range of from 100-250°C (See p. 13, line 30 to p. 14, line 1), Kohler et al. are drying paper or boards that have been treated with the aqueous solution (L_w) of a surface-finishing active ingredient (W) using drying rolls and drying roll batteries and, if desired, calenders and calender batteries. For instance, Kohler, et al. state:

> The drying can be carried out in a manner conventional per se, using the usual drying rolls and drying roll batteries and, if desired, calenders and calender batteries in the dry end, and under the drying temperature conditions which are usual therein, for example with dry steam or hot air or other heating systems, for example in the temperature range from 100 to 250°C, and under the smoothing and roll pressure, in particular

> nip pressure and line pressure conditions, which are usual per se therein.[1]

It is thus clear from this passage that the temperature range of 100 to 250°C mentioned in Kohler, et al. is the temperature that can be used when drying is carried out using drying rolls, drying roll batteries, calenders, or calender batteries. Kohler et al. are **not** through-drying a partially dewatered web of papermaking fibers by passing air heated to at least 175°C through the web. As will be apparent to those skilled in the art, calendering is a finishing process in which heat and pressure are applied to the paper by passing it between heated rollers, to impart a flat, smooth surface to the paper. Kohler, et al. simply list hot air as one possible heating system for heating the calendering rolls (or drying rolls). There is simply no disclosure in Kohler, et al. of through-drying a partially dewatered web by passing air heated to a temperature of at least about 175°C through the web. If the Office believes that the reference does disclose air heat drying at a temperature range from 100°C to 250°C, applicants respectfully request the Office point to support in the case. The support previously noted by the Office is quoted above and does not support the Office's contention.

Furthermore, there is no suggestion or motivation in the cited reference to modify the reference teachings to conduct a through-drying operation at air temperatures of at least about 175°C. The present invention provides for shorter dryer residence times and increased productivity by

[1] Kohler, et al., p. 13, ln. 30 to p. 14, ln. 2 (emphasis added).

allowing operation of the through-drying step at these elevated temperatures, while significantly reducing malodor produced upon re-wetting the dried base sheets or finished cellulosic paper products made from the base sheets. Such motivation is absent from Kohler, et al. Polyethylene glycol is used by Kohler, et al. as a surface finishing active ingredient to improve properties of paper or board, such as gloss and smoothness, surface strength, prevention of fold breaking, brightness, aging resistance, and suitability of papers and boards for printing (See Kohler, et al., p. 1). The use of polyethylene glycol in the Kohler, et al. methods thus has nothing to do with reducing malodors generated upon re-wetting of a paper product through-air dried at elevated temperatures. Accordingly, one skilled in the art upon reading Kohler, et al. would have no basis to realize that the treatment of paper or board with a glycol compound would inhibit the production of malodors and allow for through-air drying at temperatures of at least about 175°C.

As discussed above, Kohler, et al. do not disclose through-drying methods, much less the air temperatures to employ in a through-drying operation. Rather, Kohler et al. disclose drying the surface-finishing active ingredient treated paper or boards using drying rolls and drying roll batteries and, if desired, calenders and calender batteries. Although Kohler, et al. disclose drying using the drying rolls or calenders at a temperature of from 100 to 250°C, Kohler, et al. attribute no significance to using elevated drying temperatures generally. In fact, the Examples of Kohler, et al. disclose calendering at a roll surface temperature of 100°C (see Example 1 at p. 19, line

21; Example 2 at p. 21, line 4; Example 5 at p. 23, line 1; Example 8 at p. 24, line 24) or 130°C (see Example 9 at p. 26, line 15), temperatures that are well below the requisite through-drying temperature of 175°C called for in instant claim 1. There is certainly no suggestion in Kohler, et al. that the temperatures disclosed for drying using drying rolls or calenders would also be suitable for through-drying processes, nor is there any suggestion that treatment of paper or boards with a glycol compound inhibits malodor production and permits higher through-air drying temperatures of at least about 175°C.

Additionally, Kohler et al. state that their methods of drying (drying rolls, drying roll batteries, and calenders) are advantageous as they increase the concentration of W_1 at the surface of the sheet during drying.[2] Nowhere is it taught or disclosed that drying the treated web by passing hot air through the web, as suggested by the Office and required in instant claim 1, would provide this advantageous effect.

Thus, nothing in the disclosure of Kohler, et al. would have motivated one skilled in the art to use the temperatures disclosed for drying using drying rolls or calenders in a through-drying process. Thus, there is simply no motivation or suggestion to modify the Kohler et al. reference to arrive at each and every limitation of applicants' claim 1.

Additionally, it is well settled that the burden is on the Office to provide some suggestion of the desirability to do what the inventor has done; that is, the Office must

[2] *See generally*, Kohler et al. at page 12.

present a convincing line of reasoning as to why the artisan would have found the claimed invention to be obvious in light of the teachings of the references. Applicants respectfully submit that the Office has not presented a convincing line of reasoning as to why the cited reference should be modified, as required by the MPEP. Rather, the Office simply states that it would have been obvious that the hot air drying of Kohler, et al. includes hot air passing through the web, since Kohler, et al. recite that other heating systems may be used. The Office has not, however, provided any reasoning as to why the disclosure of drying temperatures for use with drying rolls, drying roll batteries, and calender and calender batteries would be obvious to apply to through-drying.

In view of the above, Applicants respectfully submit that a *prima facie* case of obviousness is lacking with respect to claim 1. As such, claim 1 is patentable over the cited references.

Claims 2-9 and 12 depend directly or indirectly from claim 1 and are patentable for the same reasons as claim 1, as well as for the additional elements they require.

Furthermore, with regard to claims 4 and 5,[3] the Office has stated that, in the Examples of Kohler et al., polyethylene glycol is added in amounts of from about 0.3 percent (referring to Example 2 at page 21 of Kohler, et al.) to about 14 percent (referring to Example 1 at page 19 of Kohler, et al.). Applicants respectfully disagree with

[3] Claim 4 depends indirectly from claim 1 and specifies that the glycol compound is topically applied to the partially dewatered web in an add-on amount of about 0.5 to about 20% by weight of the papermaking fibers in the partially dewatered web. Claim 5 depends from claim 4, and specifies an add-on amount of about 1 to about 2% by weight of the papermaking fibers.

this characterization of the disclosure of Kohler, et al.

Applicants assert that Kohler et al. fail to teach the addition of a glycol compound to a partially dewatered web in an add-on amount of about 0.5% to about 20% by weight of papermaking fibers in the web as required in claim 4. The 0.3% polyethylene glycol added in Example 2 relied on by the Office is based on the weight of fiber material (See page 21, line 8-9), the same basis used in claim 4. However, the upper end of the range of 14% from Example 1 relied on by the Examiner is clearly described as the moistening of the paper as a result of spraying the aqueous solution (Solution 1) containing polyethylene glycol **and water** (See page 19, line 18), and not the amount of polyethylene glycol alone. At page 20, line 2, Kohler et al. teach that the moistening of 14% relied on by the Examiner corresponds to an application of polyethylene glycol of **0.2%** by weight based on the fiber material. This correspondence is calculated by multiplying the application rate of Solution 1 (1.12 g/m^2) by the weight concentration of polyethylene glycol in Solution 1 (10%) and dividing by the basis weight of the paper (56 g/m^2). Similarly, none of the remaining Examples 3-8 disclose addition of polyethylene glycol in an amount greater than 0.3% by weight based on the fiber material (discussed in detail below). Thus, Kohler et al. fail to teach or suggest limitations of claim 4, including topically applying a glycol compound to a partially dewatered web in an add-on amount of from about 0.5% to about 20% by weight of the papermaking fibers in the web.

Additionally, there is no motivation or suggestion to modify the Kohler et al. reference to arrive at each and

every limitation of claim 4. As noted above, the Kohler et al. reference is directed to producing paper and paperboard having improved surface qualities, specifically, high gloss and high smoothness. As such, why would one skilled in the art modify the levels of polyethylene glycol used in Kohler et al. to read on the amounts of claim 4, which is directed to using polyethylene glycol to reduce malodors in cellulosic paper products? Nowhere in Kohler et al. is the problem of malodors in paper products even mentioned. As such, one skilled in the art simply would not, and could not, be motivated to modify the amounts of polyethylene glycol in Kohler et al., which is used for a completely different purpose than the polyethylene glycol of claim 4. As Kohler et al. fail to teach or suggest each and every limitation of claim 4 and further, there is no motivation to modify Kohler et al. to arrive at each and every limitation of claim 4, claim 4 cannot be said to be obvious over Kohler et al. and is patentable for this additional reason. Claim 5 is similar to claim 4 but specifies an add-on amount of about 1 to about 2% by weight of the papermaking fibers. Claim 5 is thus also patentable over Kohler, et al. for the same reasons as set forth above for claim 4.

Rejection of Claims Under 35 U.S.C. §102(a)

Reconsideration is requested of the rejection of claims 13-21 and 24 under 35 U.S.C. §102(a) as being anticipated by Kohler, et al. (WO 01/18310).[4]

[4] The Office has stated on page 4 of the present Office action that applicants arguments filed 1/25/06 were fully considered but not persuasive. However, applicants note that claims 13-21 and 24 are no

Claim 13 is directed to a process for manufacturing a cellulosic paper product and requires forming an aqueous suspension of papermaking fibers; depositing the aqueous suspension of papermaking fibers onto a sheet-forming fabric to form a wet web; dewatering the wet web to produce a partially dewatered web having a fiber consistency of about 80% or less; topically applying a glycol compound selected from the group consisting of polyethylene glycol, triethylene glycol, glycerol and mixtures thereof to the partially dewatered web in an add-on amount of from about 0.5% to about 20% by weight of the papermaking fibers in the web; and drying the partially dewatered web. Unlike claim 1, claim 13 does not require through-air drying by passing heated air at a temperature of at least about 175°C through the web. However, claim 13 includes the further limitation that the glycol compound be applied to the partially dewatered web in an add-on amount of from about 0.5% to about 20% by weight of papermaking fibers in the web.

With regard to claim 13, the Office has stated that Kohler, et al. disclose that polyethylene glycol is added in amounts of 0.3% based on the weight of dry fiber material (citing Example 2, p. 21, lines 10-11).

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longer rejected under 35 U.S.C. §103 over Kohler, et al., and as such, this rejection has been overcome. Applicants further note that the rejection of claims 13-21 and 24 under 35 U.S.C. §102 over Kohler, et al. (WO 01/18310) has previously been addressed in a Response to Office action dated August 8, 2005. On page 3 of an Office action dated October 31, 2005, the Office indicated that this rejection had been overcome, stating: "Claims 1-9, 12-21, 24, rejection under 35 U.S.C. 102(b) as being anticipated by Kohler (WO 01/18310), is withdrawn." However, since the Office did not indicate whether the rejection was withdrawn because it was improperly made under §102(b) or because of the arguments made in the August 8, 2005 Response to Office action, applicants again address anticipation of claims 13-21 and 24 in light of Kohler, et al.

Applicants respectfully submit that this disclosure in Kohler, et al. does not anticipate applicants' claim 13.

As noted above, the disclosure in Kohler, et al. of an application of polyethylene glycol in the amount of 0.3% based on the weight of dry fiber material does not fall within applicants' claimed ranges of an add-on amount of from about 0.5% to about 20% by weight of the papermaking fibers. Furthermore, applicants note that none of the other Examples (i.e., Examples 1 or 3-8) disclose addition of polyethylene glycol in an amount greater than 0.3% by weight based on the fiber material. For example, Example 1 discloses polyethylene glycol addition of 0.2% by weight of dry fiber material (See page 20, lines 1-2); Example 5 discloses polyethylene glycol addition of 0.2% by weight of dry dry fiber material (See page 23, lines 5-6); Example 8 includes polyethylene glycol addition of 0.15% by weight of dry fiber material (See page 25, lines 3-4), and the polyethylene glycol addition in Examples 3, 4, 6, and 7 is 0.2%,[5] 0.15%,[6] 0.1%,[7] and 0.15%[8] by weight of dry fiber material, respectively. Example 9 does not disclose the addition of polyethylene glycol in terms of the fiber

[5] This can be calculated by multiplying the application rate of Solution 2 (1.8 g/m^2) by the weight concentration of polyethylene glycol in Solution 2 (7.8%) and dividing by the basis weight of the paper (60 g/m^2).

[6] This can be calculated by multiplying the application rate of Solution 3 (1.8 g/m^2) by the weight concentration of polyethylene glycol in Solution 3 (5%) and dividing by the basis weight of the paper (60 g/m^2).

[7] This can be calculated by multiplying the application rate of Solution 5 (0.729 g/m^2) by the weight concentration of polyethylene glycol in Solution 5 (5%) and dividing by the basis weight of the paper (36 g/m^2).

[8] This can be calculated by multiplying the application rate of Solution 6 (0.729 g/m^2) by the weight concentration of polyethylene glycol in Solution 6 (7.5%) and dividing by the basis weight of the paper (36 g/m^2).

material and fails to disclose information sufficient to make such a calculation.

As stated in MPEP §2131, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Since Kohler, et al. fail to disclose topically applying a glycol compound to a partially dewatered web in an add-on amount of from about 0.5% to about 20% by weight of papermaking fibers in the web, Kohler, et al. fail to disclose each and every limitation of claim 13. As such, claim 13 is novel over the Kohler, et al. reference

Claims 14-21 and 24 depend directly or indirectly from claim 13 and are patentable for the same reasons as claim 13 set forth above, as well as for the additional elements they require.

Additionally, with regard to claims 17-19,[9] applicants note that Kohler, et al. fail to disclose through-drying a partially dewatered web. As discussed above, although Kohler et al. do disclose drying using dry steam or hot air in the temperature range of from 100-250°C (See p. 13, line 30 to p. 14, line 1), Kohler et al. are drying paper or boards that have been treated with the aqueous solution (L_w) of a surface-finishing active ingredient (W) using drying rolls and drying roll batteries and, if desired, calenders and calender batteries. Kohler et al. are **not** through-drying a partially dewatered web of papermaking fibers by

[9] Claim 17 depends indirectly from claim 13 and specifies that the partially dewatered web is dried by passing heated air at a temperature of at least about 190°C through the web. Claim 18 depends from claim 17 and specifies the temperature of the heated air is from about 190° to about 210°C. Claim 19 depends from claim 18 and specifies the temperature of the heated air is from about 200° to about 205°C.

passing heated air through the web, for the reasons noted above. As such, claims 17-19 are also patentable over Kohler, et al. for this additional reason.

CONCLUSION

In light of the foregoing, applicants respectfully request favorable reconsideration and allowance of all pending claims. The Commissioner is authorized to charge any fee deficiency in connection with this Letter To The U.S. Patent And Trademark Office to Deposit Account No. 19-1345.

Respectfully Submitted,

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